



**United Space Alliance
Kennedy Space Center**

CONTRACTOR SAFETY

A Systematic Approach to Contractor Safety at a Voluntary Protection Program (VPP) Site Through the Application of Basic Process Safety Management Principles

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INTRODUCTION

The United States Space Industry is 50 years young. It has met new scientific challenges while sustaining the integrity of mature technology.

United Space Alliance is carrying the torch to the next milestone in space exploration. We welcome the task, we prepare for the risk, we anticipate our accomplishments of the future all the while questing for excellence.

Presentation History

2003- First Presentation

Lessons learned

Process Improvements

Presentation Objectives

- ***Co-Mingling PSM Requirements with VPP***
 - ***Company Policy/Departmental Integration***
 - ***Contractor Selection Process***
 - ***Assisting Contractors in Meeting Stringent Safety Requirements***
 - ***Holding Contractors ACCOUNTABLE***
 - ***Monitoring Contractor Jobs – Safety Perspective***
 - ***Challenges and Lessons Learned***
-

US Rocket & Space Technology History

- Development
- Testing
- Launch Site Selection



Location, Location, Location

Citrus
Groves

Birds,
Wildlife,
Vegetation



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**National Wildlife Refuge with Part of the Coastal Area
National Seashore, Consisting of 140,000 Acres**







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KSC TODAY

- Private Industry Provides the Services
- Obtaining the Contract



Competitive price

Performance

A SINGLE PRIME CONTRACTOR

- The Reward is a substantial cost savings to the shuttle program of \$400 million compared to prior costs

- ***UNITED SPACE ALLIANCE***

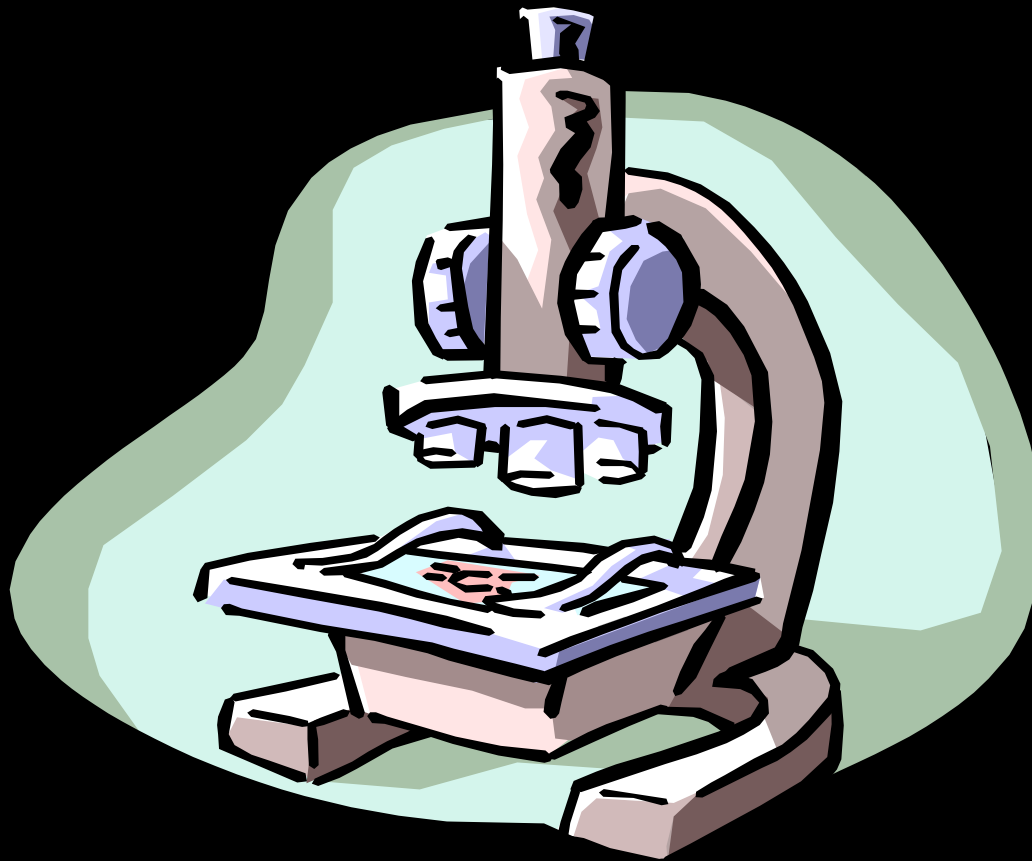
- A Prime Contractor for Space Shuttle Program
 - Contract Award
 - Contract Responsibility
 - Fixed Price Contractor Process
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Being the Prime Contractor has its Challenges



USA FL VPP STAR SITE: May 2002

- **Re-Certification taking place this year (2006)**
 - **13 USA Special Government Employees (SGEs) on Site to Support**
-

OSHA - Process Safety Management Standard

Application

- Contractors performing maintenance, repair, turnaround, major renovation, or specialty work on or adjacent to a covered process are covered by this standard

29 CFR 1910.119

Reference

(h)(1)

Contractors providing incidental services which do not influence process safety such as janitorial work, food and drink services, laundry, delivery, or other supply are not covered by the standard

PSM REQUIREMENT

REFERENCE 29 CFR 1910.119

- Employer Responsibility.
Obtain and evaluate information regarding the contractors' safety performance and programs when selecting a contractor
- Employer Responsibility.
Inform contractors of known potential fire, explosion, or toxic release hazards related to the contractors' work and the process

- (h)(2)(i)
 - (h)(2)(ii)
-

PSM REQUIREMENT (CONT.)

- Employer Responsibility.
Applicable provisions of the emergency action plan are explained to contract employers
- Employer Responsibility.
Develop and Implement Safe Work Practices to Control Entrance, Presence, and Exit of Contract Employers and Employees

REFERENCE (CONT.)

- (h)(2)(iii)
 - (h)(2)(iv)
-

PSM REQUIREMENT (CONT.)

REFERENCE (CONT.)

- Employer Responsibility.
Perform Periodic Evaluations
of Contractor Employees to
Assure They are Fulfilling
Their Obligation per (h)(3)

- (h)(2)(iv)
- (h)(3)

- Employer Responsibility.
Maintain a Contract
Employee Injury & Illness
Log Related to the
Contractor's Work in
Process Areas

- (h)(2)(vi)
-

PSM REQUIREMENT (CONT.)

REFERENCE (CONT.)

- Employer Responsibility.
Issue Hot Work Permits for
Hot Work Operations on or
Near a Covered Process
- Employer Responsibility.
Develop a team that to
investigate incidents which
resulted in or could
reasonable have resulted in,
a catastrophic release of
highly hazardous chemicals
in the workplace.

- (k)(1)

- (m)(3)

PSM REQUIREMENT (CONT.)

- Contract Employer Responsibility. Assure that Each Contact Employee is Trained in the Work Practices Necessary to Safely perform their Job
- Contract Employer Responsibility. Provide instruction to each contact employee of the known potential fire, explosion, or, toxic release hazards related to their job and process and applicable provisions of the emergency action plan

REFERENCE (CONT.)

- (h)(3)(i)
 - (h)(3)(ii)
-

PSM REQUIREMENT (CONT.)

• REFERENCE (CONT.)

- Contract Employer Responsibility. Document that each employee has receives & understands the required training
- Contract Employer Responsibility. Prepare training records with employee identity, training date, and verification that the training is understood

- (h)(3)(iii)



PSM REQUIREMENT (CONT.)

REFERENCE (CONT.)

- Contract Employer Responsibility. Assure that each employee complies with safety rules of the facility and safe work practices per (f)(4)
- Contract Employer Responsibility. Advise employer of any unique hazards presented or identified by the contractor employer's work

- (h)(3)(iv)
 - (f)(4) –
 - Employer responsibility. Develop & implement safe work practice to provide control of hazards during operations i.e., LOTO, Confined space entry, etc. & control over entry into facility by maintenance, contractor, laboratory, or support personnel
 - (h)(3)(v)
-

Voluntary Protection Program (VPP)

- TED 8.4
 - March 25, 2003, OSHA issued instruction and clarification of the overall framework of policy and procedure for administering the OSHA VPP program
 - Contractor Coverage Requirements for contract worker safety and health at VPP sites have been strengthened; new requirements to report contractor illness and injury rates have been added
 - Applicable Contractor – A contractor whose employees worked at least 1000 hours at the site in any calendar quarter within the last 12 months and are not directly supervised by the applicant/participant
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VPP

Application

- All contractors, whether regularly involved in routine site operations or engaged in temporary projects such as construction or repair, must follow the safety and health rules of the host site.

Reference

- Chapter 3, C.c.
-

VPP REQUIREMENT

- Contract Work Coverage
Contract workers must be provided with safety and health protection equal in quality to that provided to employees.
- Injury and Illness Data Requirements
Nested contractors (such as contracted maintenance workers) and temporary employees who are supervised by host site management are governed by the site's safety and health management system and are therefore included in the host site's rate.

REFERENCE

- Chapter 3, C.c.
 - Chapter 3, C.c.
-

VPP REQUIREMENT (CONT.)

- VPP participants must have in place a documented oversight and management system covering applicable contractors. Such a system must:
- Ensure that the safety and health consideration are addressed during the process of selecting contractors and when contractors are onsite
- Encourage contractors to develop and operate effective safety and health management systems.
- Include a provision for removing a contractor or contractor's employees from the site for safety and health violations.

REFERENCE

- Chapter 3, C.c.

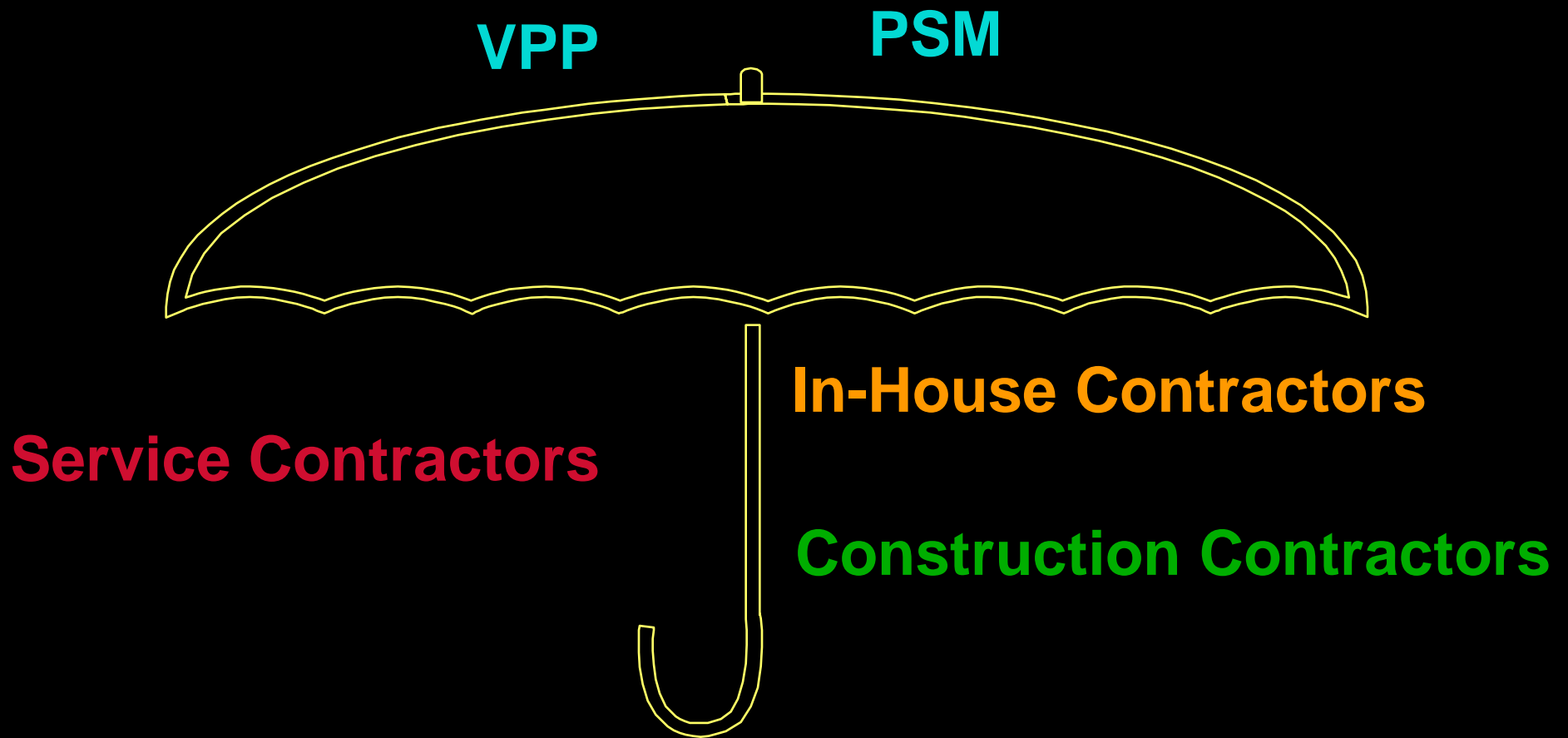


PSM

- Selection Process – performance & programs
- Documented Safety & Health Training & Retraining
- Performance is Periodically Evaluated & Assurance of Safety Rule & Policy Compliance
- Provide information to the Host Employer of Created or Discovered Hazards
- Inform Employees of Unique Hazards/Procedures of the Facility

VPP

- Selection Process – Contractors Report Illness & Injury Rates
 - Prompt Correction or Process to Remove Contract Workers for Non-Compliance
 - Develop & Operate Effective Safety & Health Management Systems
 - Contract Employees Provided Safety & Health Protection Equal to that of Regular Employees
-



Service Contracts Include:

- Water Delivery Services**
 - Lawn Services**
 - Furniture Moving**
 - Computer Services (hardware)**
 - Bulk Propane**
 - Gas Cylinder Delivery**
 - Repair/Warranty**
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In-House Contractors Include:

- Chemical Laboratory Services**
- Janitorial Services**
- Life Support/Propellants**
 - Respiratory Protection (SCBA, Level A)**

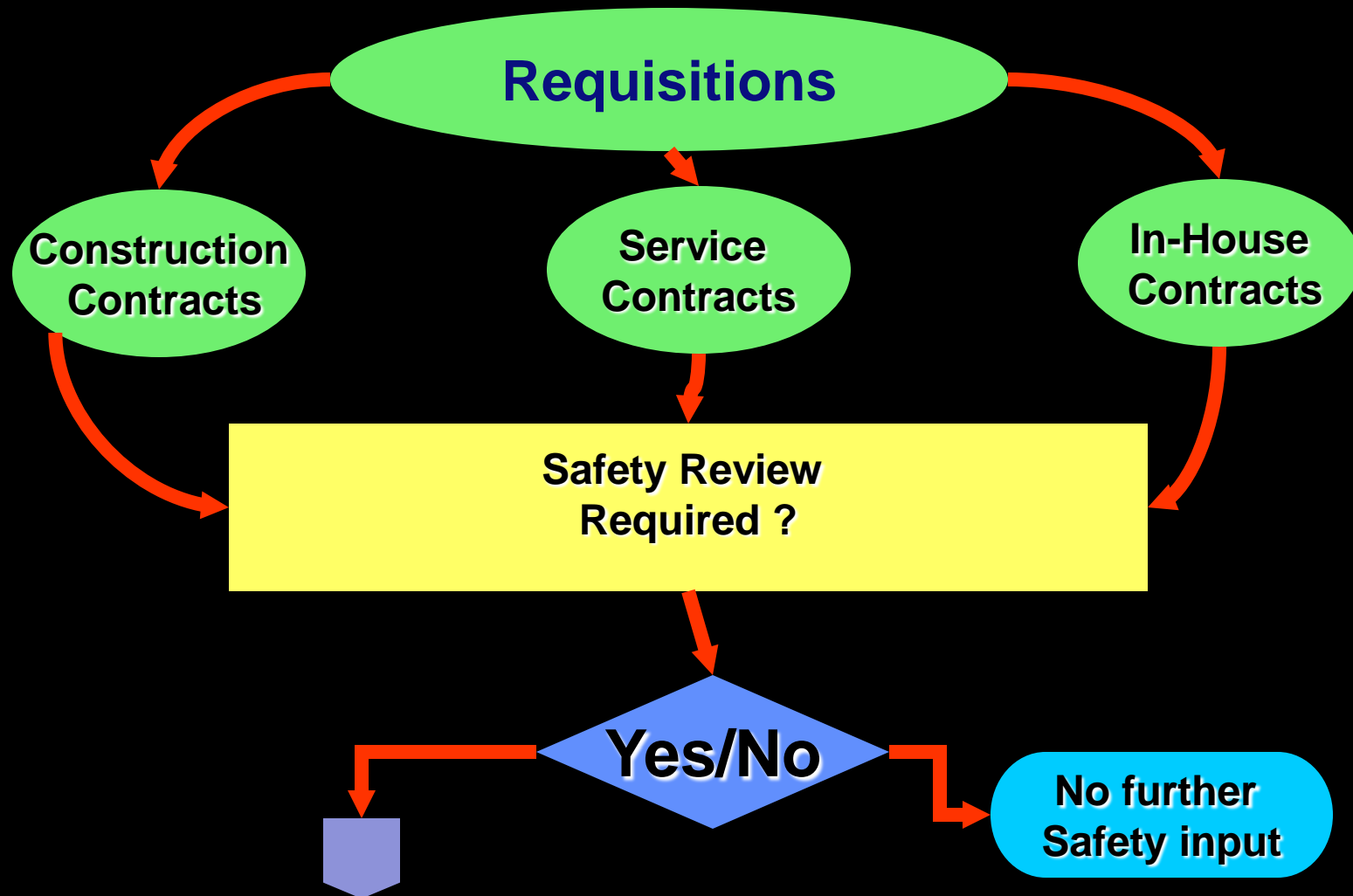
The “In House” Contractor Fall Under the Same Requirements as the Host Employer

i.e., Process Hazard Analysis (PHA) teams, reporting of injuries

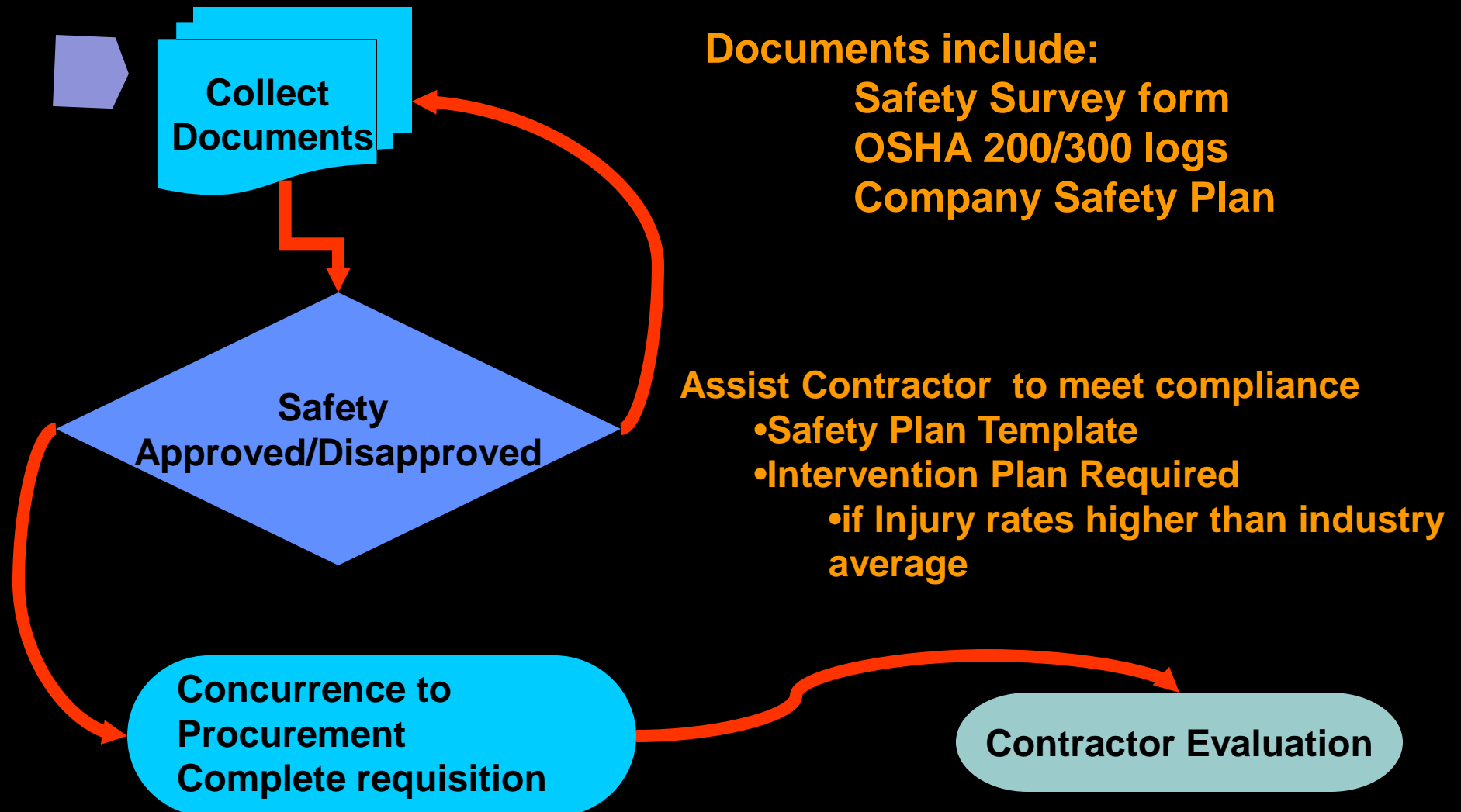
Construction Contracts Examples:

- Corrosion Control of Structures
 - Lead and other Heavy Metals, Silica
 - Asbestos
 - Dredging
 - Pressurized Systems- Storage Tanks, H₂/HE Storage Batteries
 - Piping and Tubing Replacement – Cross Country Lines
 - Fuels, Oxidizers
 - Mechanical and Manual Lifting
 - Communication Lines/Manhole Installation
 - Fabrication/Installation
-

Contract Requisition System



Contract Requisition System (cont.)



Contract Requisition System - Summary

- **Company Policy – company wide implementation**
 - **One system for purchasing service with ES&H integration**
 - **Education of workforce regarding responsibilities/obligations**
 - **Automation of approval process/documentation**
 - **Partnership with Procurement and various departments**
 - **Capture escapes**
 - **Support integrity of process**
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Managing Subcontractors at a PSM/VPP Site

- **Contractor Classifications**

 - Service**

 - Construction**

 - Integrated Contractors or “In-House” Contractors**

- **Pre-Approval Process**

 - Contract Document**

 - Safety Plan Requirements**

 - Safety Performance Review**

Pre-Approval Process for Subcontractors

Contract Document

Collaborate on a Document to Address Contractual Requirements Imposed on the Contractors.

Pre-Approval Process for Subcontractors

Safety Plan Requirements

1. Define Management Structure and Safety Responsibility
 2. Obtain Contractor Basic Safety Programs
 - Hazardous Communications
 - Respiratory Protection Program
 - Confined Space Program
 - Lockout/Tagout Program
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Pre-Approval Process for Subcontractors

Safety Plan Requirements (cont.)

3. Define Specific Work Policies/Programs and Information the Contractor Provides to Their Employees

4. Address HOST Facility, Specific Safety Rules/Requirements and/or Contract Requirements...How will the Contractor Provide and Present to Employees?

Pre-Approval Process for Subcontractors

Safety Plan Requirements (cont.)

5. Contractor Disciplinary Policy

6. Contractor Safety Training/Programs are Conducted to Employees and Training Implementation.

7. Address Mishaps. Provide Procedures and Mishap Investigation procedures.

Pre-Approval Process for Subcontractors

Safety Performance Review

1. Contractor Disclosure
 - Injury & Illness Information for the Present Year & Past 2 Years
 - OSHA Violations
 2. Worksite Inspections
 - Regular & Frequent
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Pre-Approval Process for Subcontractors

Safety Performance Review (con't)

3. Programs & Training

4. Use of sub tiers

- Injury & Illness Information

Assisting Subcontractors in meeting Stringent Safety Requirements

- Directing subcontractor to OSHA outreach program
 - Directing subcontractor to OSHA
 - Providing free workshops to local subcontractors through VPPPA region meetings
-

Managing Contractors at PSM/VPP Sites

1. Employer Determine Health & Physical Hazards Related to Each Contract to Ensure Contractors Address and Comply to the Specific Safety Issues.

 2. Annually, Ensure Contractors Submit Subcontractor Injury & Illness Rates. High Injury & Illness Rates are Addressed on an Individual Basis
 - New Contractors, Past three (3) Year Average
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Managing Contractors at PSM/VPP Sites (cont.)

3. Require Contractors to Submit a Comprehensive Safety Plan.

- Provide an Outline Defining Plan Requirements

4. Ensure Surveillance of Contractor Work by the Contract Employer

Managing Contractors at PSM/VPP Sites (cont.)

5. Establish a System to Address Performance Discrepancies Likewise, Acknowledge Exemplary Performance
 6. Develop a Grading System to Evaluate Each Construction Contract to Reflect Contractor and also Employer Performance.
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Managing Contractors at PSM/VPP Sites (cont.)

7. Any Contractor Safety Performance that Falls Below Average is Not Eligible to Bid New Contracts Until an Intervention Plan is Developed & Implemented
 8. Communicate Safety Commitment to Contractor – Internal/External
 - Non-Compliance Will NOT Be Tolerated
-

Managing Contractors at PSM/VPP Sites (cont.)

9. Ensure PSM Information is Consistently & Adequately Provided to the Contract Employees
 - Address Training/Retraining
 - Address Literacy & Non-English Speaking Issues
 - Ensure Adequate Comprehension
 10. Awareness of Process Changes
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Construction Activities

- Pose the Largest Challenges
 - Largest Budget
 - Could Account for Big Liability
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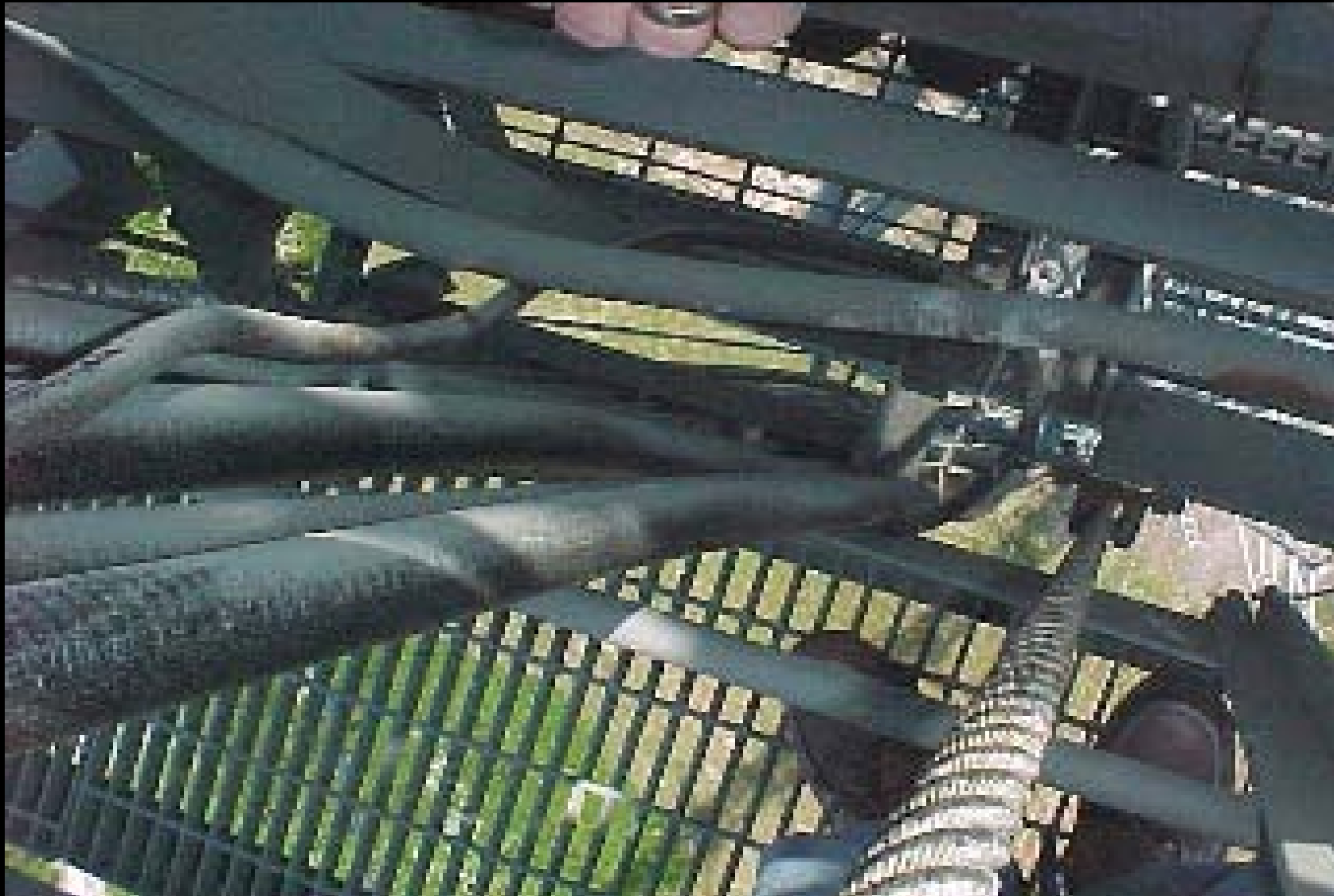


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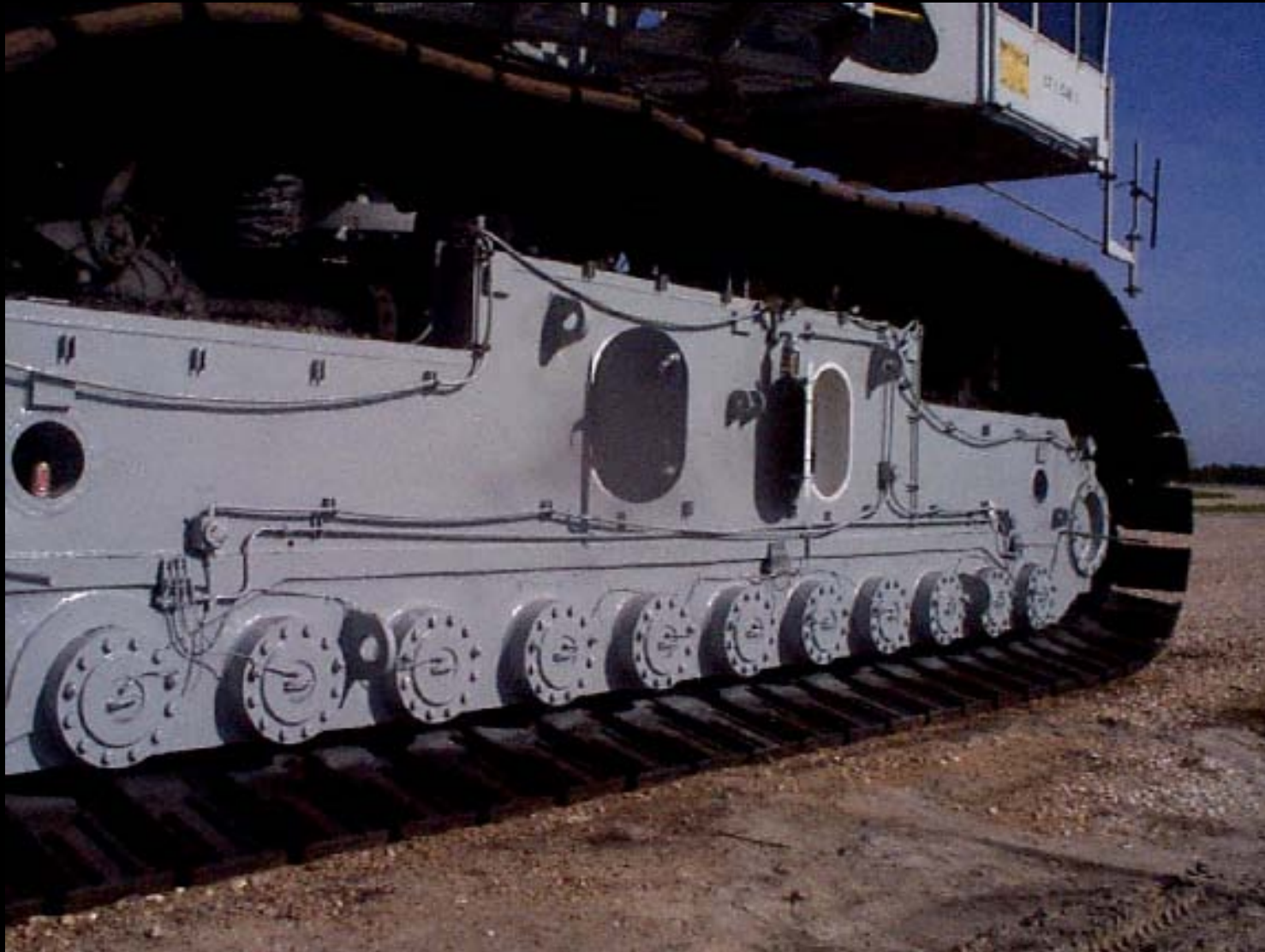
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Providing Subcontractor Oversight

- Ensure subcontractor Accountability
 - Require subcontractors to Provide Full-time Safety Coverage on Designated Contracts
 - Require subcontractors to Provide Certified Industrial Hygiene expertise on designated Contracts
 - Evoke a Disciplinary Notice Policy to Address Non-Compliance Issues
 - Provide a Report Card System Where Both Parties Evaluate Performance
-

Providing Contractor Oversight (cont.)

- The “Host” Company Must Provide Continuous Safety Contract Coverage at Each Construction Project
 - Approve the Contractors to Perform Work
 - Statement of Work & Design Reviews
 - Pre-Bid, Pre-Award, Pre-Work Meeting Support for construction projects
 - Field Changes
 - Ensure Mishap Investigations
 - Evaluation of Safety Performance – before, during and after
-

Summary

- PSM Requirements Compliment the VPP Requirements
 - Provide Safety Consulting
 - Define the Contractor Process
 - Follow the Process
 - Involve Safety Oversight Throughout the Contract
 - Acknowledge Great Performance as Well as Poor
 - Provide a Climate Where Following Safety Requirements Is First Priority, Schedule DOES NOT Drive SAFETY PERFORMANCE
-

Lessons Learned

- Integrate the Process Throughout the Various Departments i.e., Procurement, Engineering, Safety, Field Engineering, Facilities Managers, etc.
 - Capture the process at the beginning of the process – not when the contract is required!
 - Consistency for all contracts (construction/services)
 - Be prepared for push back! – Communication is critical
 - Automate as much as possible – Don't be the hold up!
 - There are always escapes! – Look for them
 - Always being compared to other Prime Contractors
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**Provide safe, high-quality,
best-value space operations,
services and technologies to
our customers.**

QUESTIONS??

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THANK YOU!

